

1 WHAT IS CLAIMED IS:

1. A method for providing a control signal for a programmable gain attenuator (PGA), the method comprising:
 - 5 setting a value for a fine control portion of a programmable gain attenuator;
 - operating a coarse AGC portion of a control loop that compares an average absolute value of the signal controlled to a reference value;
 - terminating the operation of the coarse AGC portion of the control loop; and
 - operating the fine control portion of the programmable attenuator.
- 10 2. A method as in claim 1 wherein the setting of a value for the fine control portion of a programmable gain attenuator comprises setting the value to a midrange value.
- 15 3. A method as in claim 1 wherein the comparing of an average absolute value of the signal controlled to a reference value further comprises:
 - comparing the average absolute value of the signal to be controlled to a value calculated to make signal clipping occur at a rate less than the specified error rate of the system.
- 20 4. A method as in claim 3, the method further comprising:
 - predicting the reference value by using the Chernoff Bound of the probability density function of the signal controlled.

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